

# OWNER'S MANUAL

## 5 and 8 H.P. LOG SPLITTERS

### Model Numbers

**242-642A**

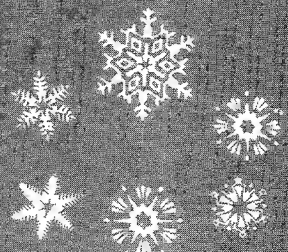
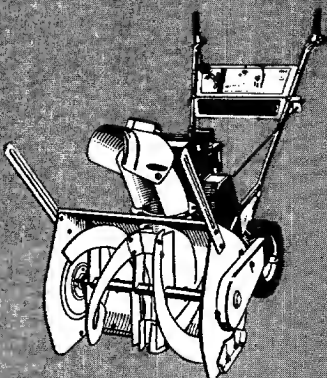
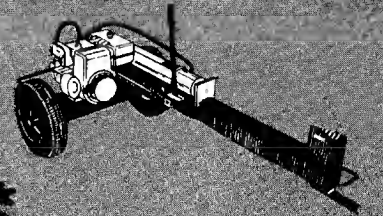
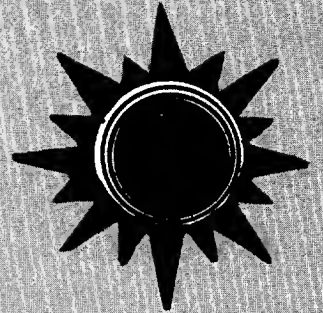
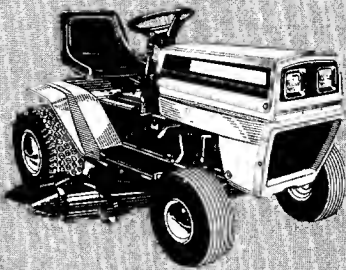
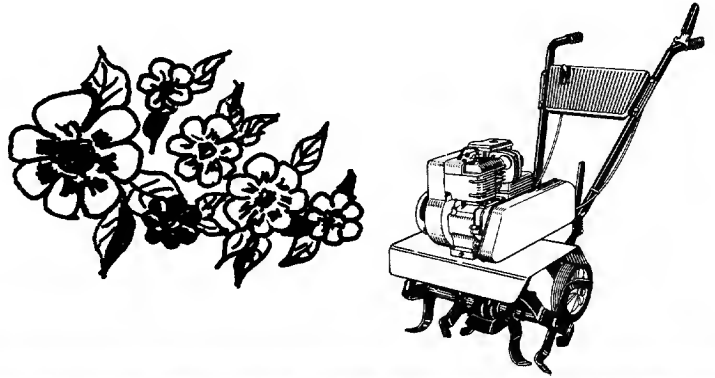
**242-645A**

**24642-A**

**24645-A**

**Important:**  
**Read Safety Rules and**  
**Instructions Carefully**

Thank you for purchasing an  
American built product.



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## LIMITED WARRANTY

For one year from the date of original retail purchase, MTD PRODUCTS INC will either repair or replace, at its option, free of charge, F.O.B. factory or authorized service firm, any part or parts found to be defective in material or workmanship. Transportation charges for the movement of any power equipment unit or attachment are the responsibility of the purchaser. Transportation charges for any parts submitted for replacement under this warranty must be paid by the purchaser unless such return is requested by MTD PRODUCTS INC.

This warranty will not apply to any part which has become inoperative due to misuse, excessive use, accident, neglect, improper maintenance, alterations, or unless the unit has been operated and maintained in accordance with the instructions furnished. This warranty does not apply to the engine, motor, battery, battery charger or component parts thereof. Please refer to the applicable manufacturer's warranty on these items.

This warranty will not apply where the unit has been used commercially.

Warranty service is available through your local authorized service dealer or distributor. If you do not know the dealer or distributor in your area, please write to the Customer Service Department of MTD.

The return of a complete unit will not be accepted by the factory unless prior written permission has been extended by MTD.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.



**WARNING**

### TO PURCHASERS OF INTERNAL COMBUSTION ENGINE EQUIPPED MACHINERY OR DEVICES IN THE STATE OF CALIFORNIA

The equipment which you have just purchased does not have a spark arrester. If this equipment is used on any forest covered land, brush covered land, or grass covered unimproved land in the State of California, before using on such land, the California law requires that a spark arrester be provided. In addition, spark arrester is required by law to be in effective working order. The spark arrester must be attached to the exhaust system and comply with Section 4442 of the California Public Resources Code.

# → IMPORTANT

It is suggested that this manual be read in its entirety before attempting to assemble or operate. Keep this manual in a safe place for future reference and for ordering replacement parts.

This unit is shipped WITHOUT GASOLINE or OIL. After assembly, see operating section of this manual for proper fuel and engine oil recommendations.

Your log splitter is a precision piece of power equipment, not a plaything. Therefore exercise extreme caution at all times.

## SAFE OPERATION PRACTICES FOR LOG SPLITTERS

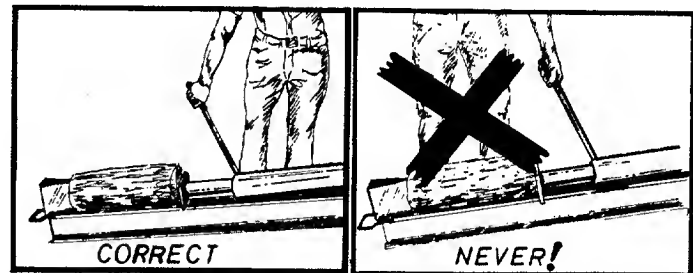
### TRAINING

1. Know the controls and how to stop quickly--  
READ THE OWNER'S MANUAL.
2. Do not allow children to operate. Do not allow adults to operate it without proper instruction. Only persons well acquainted with these rules of safe operation should be allowed to use your log splitter.
3. Open doors if engine is run in garage--exhaust fumes are dangerous. Do not run engine indoors.
4. Always operate the log splitter from the engine side of the beam.

### PREPARATION

1. Do not wear loose fitting clothing that could get caught on the moving parts.
2. Do not operate equipment when barefoot or wearing open sandals. Always wear substantial footwear.
3. Check the fuel before starting the engine. Do not fill the gasoline tank indoors, when the engine is running, or while the engine is still hot. Wipe off any spilled gasoline before starting the engine.
4. Use only in daylight or in good artificial light.
5. Never operate the equipment in the rain. Always be sure of your footing.

Stand behind the ram when operating. See drawings.



### OPERATION

1. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
2. Do not put hands or feet near rotating or moving parts.
3. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
4. When cleaning, repairing or inspecting, make certain all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the plug to prevent accidental starting.
5. Handle gasoline with care--it is highly flammable.
  - A. Use approved gasoline container.
  - B. Never remove cap or add gasoline to a running or hot engine or fill fuel tank indoors. Wipe up spilled gasoline.

6. Be careful not to touch the muffler after the engine has been running. It is HOT.

### MAINTENANCE and STORAGE

1. Keep all nuts, bolts, screws, hose clamps and hydraulic fittings tight to be sure equipment is in safe working condition.
2. Never store the equipment with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
3. To reduce fire hazard keep engine free of grass, leaves, wood chips, excessive grease and oil.
4. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
5. Never store outside without a waterproof cover. Rain will cause rust on the inside of the cylinder.

# ASSEMBLY INSTRUCTIONS

## TOOLS REQUIRED:

- (1) Raw Hide or Plastic Hammer
- (1) 1-1/8" Wrench or Adjustable Wrench
- (1) 3/4" Wrench

## OTHER MATERIALS NEEDED:

- (A) One gallon of regular grade gasoline (for engine)
- (B) 1-1/2 pints of SAE 30 or 10W-30 oil (for engine)
- (C) Approximately 3 gallons of Dexron II automatic transmission fluid. (May be obtained at your local service station or auto parts store).
- (E) Automotive Grease
- (F) Funnel

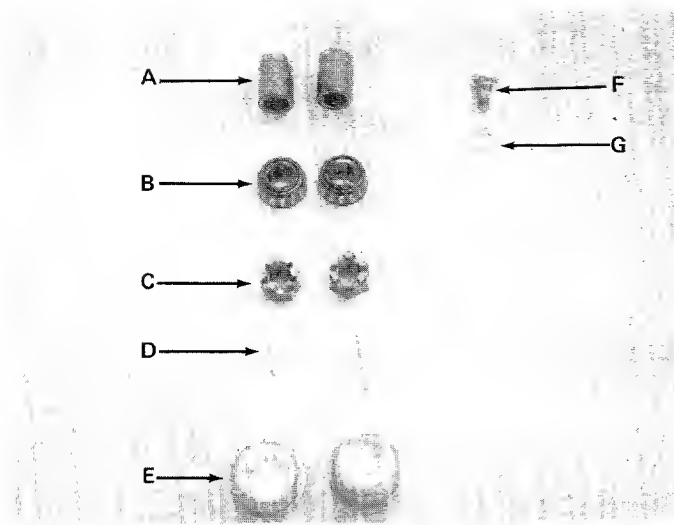


FIGURE 1

## CONTENTS OF HARDWARE PACK (See Figure 1):

- (A) (2) Spacers
- (B) (2) Tapered Roller Bearings
- (C) (2) Hex Castle Nuts 3/4-16 Thread
- (D) (2) Cotter Pins
- (E) (2) Hub Caps
- (F) (1) Shoulder Bolt
- (G) (1) Flat Washer

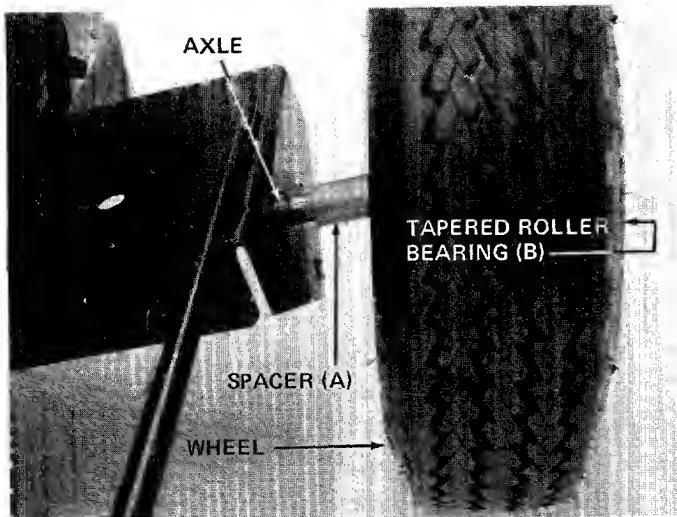
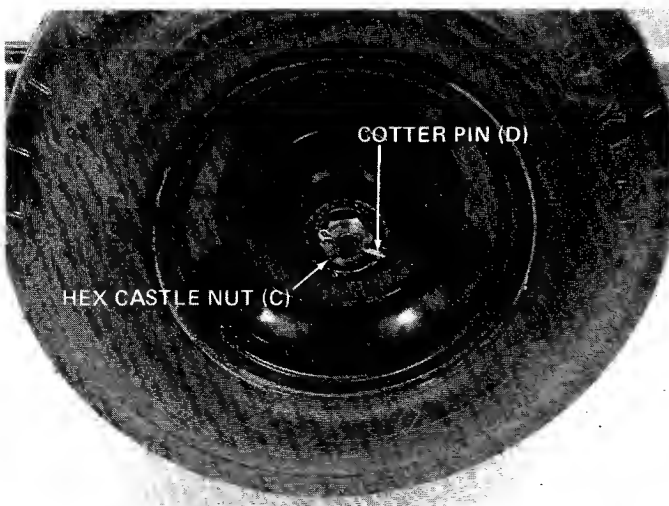


FIGURE 2

1. Pack the tapered roller bearings with automotive grease.

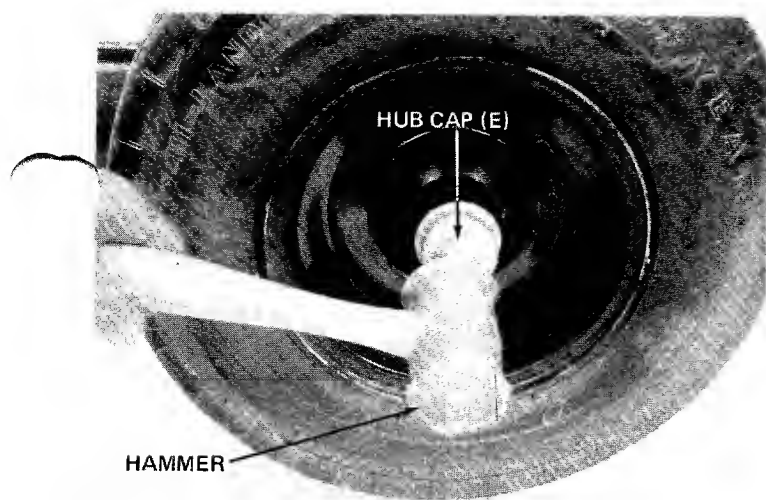


Do not put any grease in the hub caps.



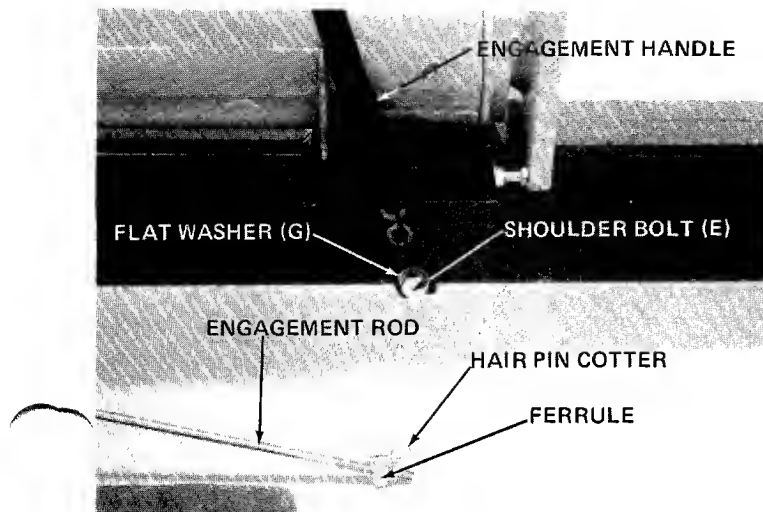
2. Place one spacer (A) on axle, then one wheel and tapered roller bearing (B). See figure 2.
3. Thread hex castle nut (C) on axle. Tighten castle nut until snug, then back off approximately 1/3 turn or until one of the slots on the castle nut lines up with hole in axle. Secure castle nut to axle with cotter pin (D). See figure 3.

FIGURE 3



4. Place hub cap (E) in position on wheel and tap on with a plastic hammer. See figure 4.
5. Repeat steps 1 through 4 for the second wheel.

FIGURE 4



6. Secure engagement handle to beam with shoulder bolt (F) and flat washer (G). See figure 5.
7. Remove the hair pin cotter from ferrule.
8. Secure engagement rod to engagement handle with hair pin cotter. See figure 5.

### TIRE PRESSURE

FOR SHIPPING PURPOSES, THE TIRES ON YOUR UNIT MAY BE OVER-INFLATED. TIRE PRESSURE SHOULD BE REDUCED BEFORE UNIT IS PUT INTO OPERATION. RECOMMENDED PRESSURE SHOULD BE APPROXIMATELY 15 P.S.I. EQUAL TIRE PRESSURE SHOULD BE MAINTAINED ON ALL TIRES. MAXIMUM TIRE PRESSURE IS 30 P.S.I.

FIGURE 5

## OPERATION

### BEFORE STARTING



Refer to engine manual packed with log splitter for complete instructions for the care and maintenance of engine. **READ DIRECTIONS CAREFULLY.**

1. Fill oil sump with approximately 1-1/2 pints of SAE 30 oil, or to full mark on dipstick. See Figure 6. Use MS classification oil. Do not use oils marked only MM or ML or unmarked. Above 32°, use SAE 30; below 32° use SAE 10W-30. These recommendations must be followed for best performance and long life.  
During initial break-in period, oil level should be watched closely. Refer to the engine manual.
2. Fill fuel tank, using clean, fresh, **regular** grade automotive gasoline. Fill tank completely.

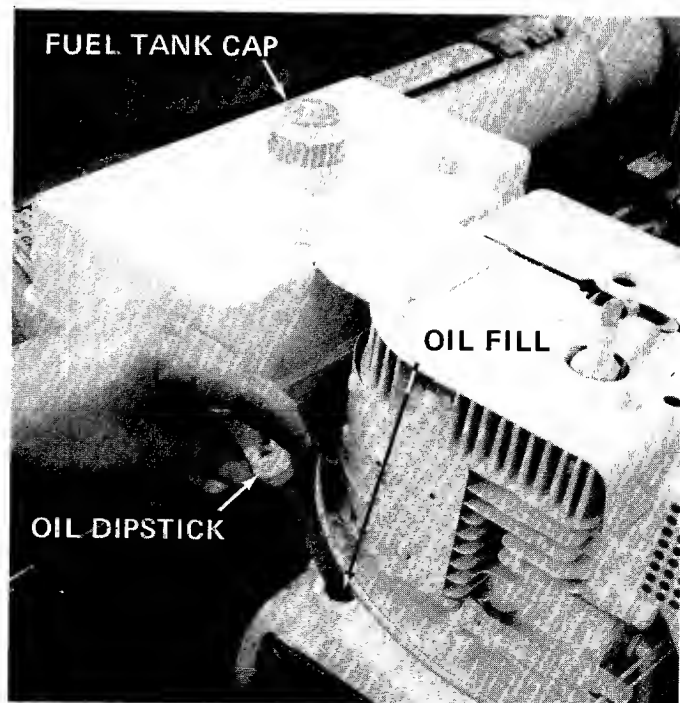


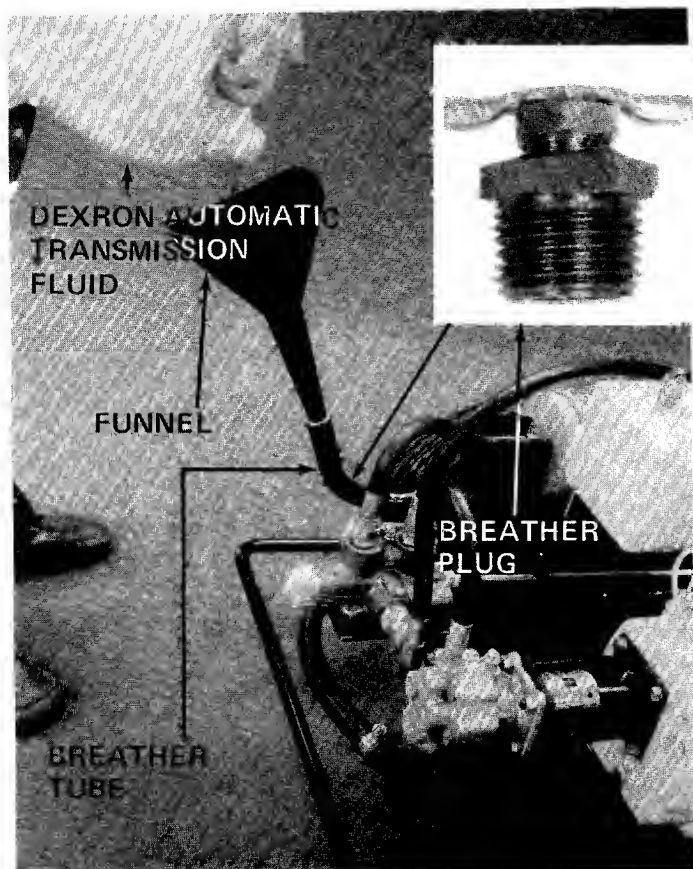
FIGURE 6

3. Fill reservoir tank on log splitter. Remove the breather plug from breather tube. See figure 7. Pour approximately 3 gallons of Dexron automatic transmission fluid ONLY into breather tube.



### CAUTION

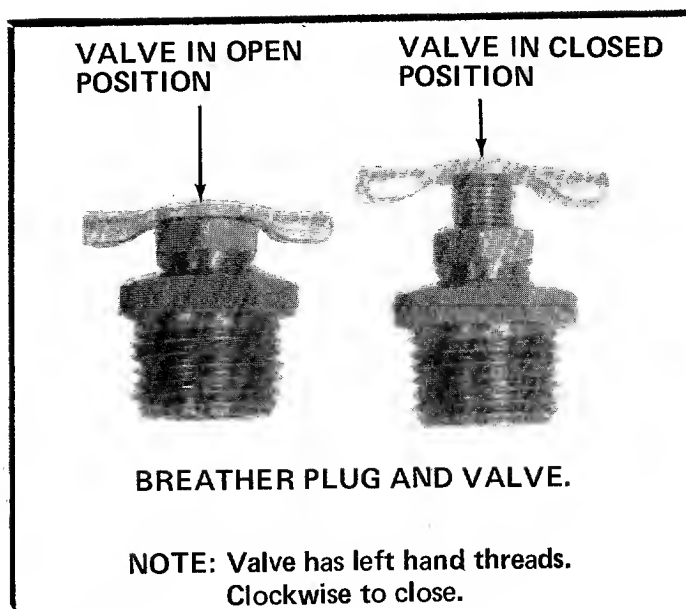
**DO NOT** operate log splitter without proper amount of oil in reservoir tank (beam).



**FIGURE 7**

### TO START ENGINE

1. Place throttle control lever (on beam) in run position.
2. Move choke lever to CHOKER position.
3. Open the breather valve. Valve must be open when running log splitter. Valve must be closed when transporting log splitter. See figure 8.
4. Grasp starter handle, place one foot on wheel and pull starter handle with a quick, full arm stroke. Return rope slowly to the engine.



**FIGURE 9**

### TO STOP ENGINE

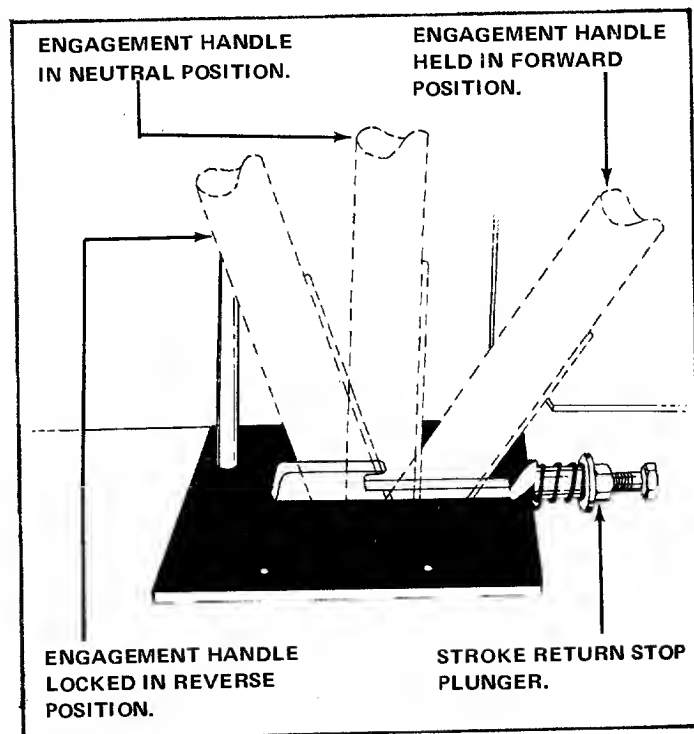
1. Move throttle control lever to STOP position.
2. Remove high tension wire from spark plug to prevent accidental starting by children while equipment is unattended.

### USING YOUR LOG SPLITTER

Your log splitter is designed for safe, efficient operation. CARE, OF COURSE, MUST BE EXERCISED THAT HANDS ARE KEPT AWAY FROM MOVING PARTS.

Engagement handle has three positions: (See figure 9)

Forward—Ram moves toward wedge.  
Neutral—ram stops in place.  
Reverse—ram returns.



**FIGURE 8**



Maximum length that can be split is 24".

1. Set throttle at maximum speed.
2. Place log on beam and hold in place with right hand. See figure 10.

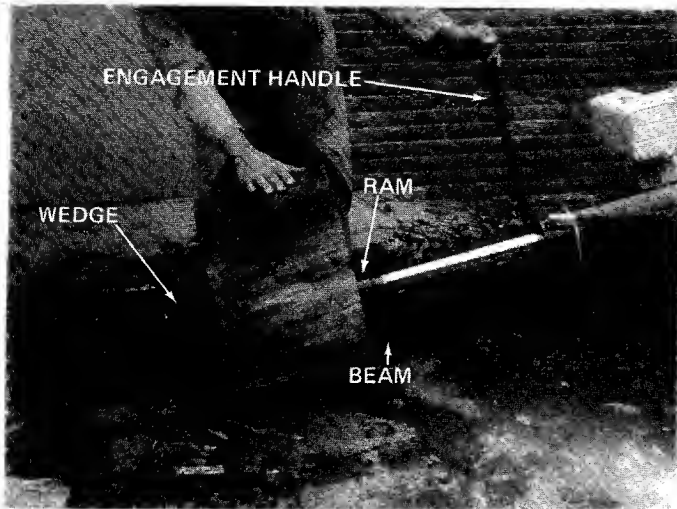


FIGURE 10

3. Slowly move engagement handle forward until ram rests against log. Release engagement handle (Neutral).
4. Remove your hand from the log and step behind the ram. See figure 11.

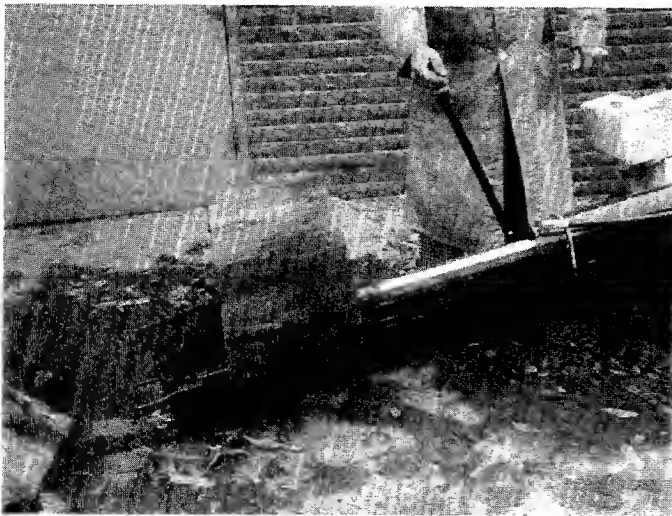


FIGURE 11

5. Move engagement handle forward until log is split.
6. Move the engagement handle to the rear to return ram.

The ram should take approximately 30 seconds to make a complete cycle. This speed may vary depending on throttle setting and temperature of oil.



#### NOTE

If you lock the engagement handle in the reverse slot, the ram will return until it hits the return stroke stop plunger, which will throw the engagement handle into neutral automatically.



#### DANGER

Never attempt to cut a log in half with the log splitter. See figure 12.

Never stand next to the ram when operating. See figure 13. Always stand behind the ram.

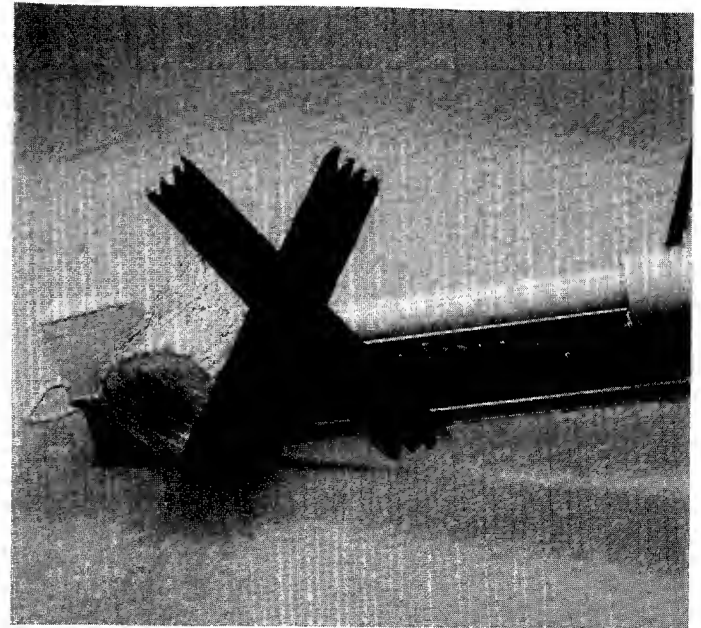


FIGURE 12

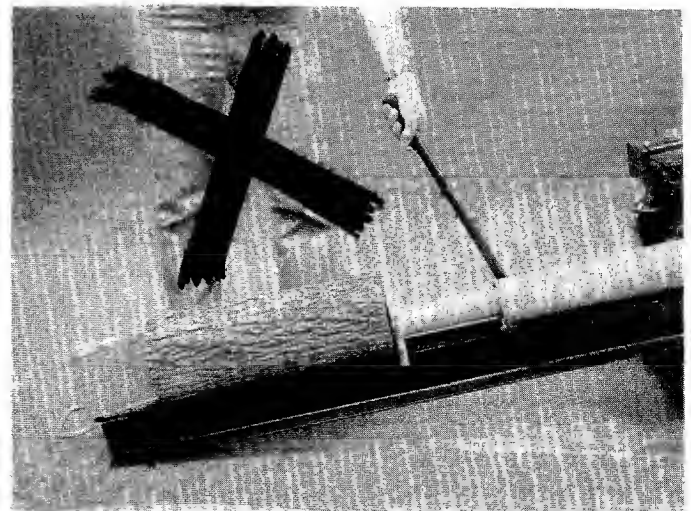


FIGURE 13

# ADJUSTMENTS

## CARBURETOR ADJUSTMENTS

Refer to engine manual packed with your unit for carburetor adjustment information.

## PRESSURE RELIEF VALVE SETTING

If the pressure relief valve is set too low, it will open up before enough pressure is built up to properly operate the ram. See figure 14.

To set the pressure relief valve:

1. Have someone place a log crossways in the splitter and allow the ram to push against it with the engine at full throttle.
2. If the engine begins to labor, the relief valve setting is correct.
3. If adjustment is necessary, tighten the screw until the engine begins to labor.

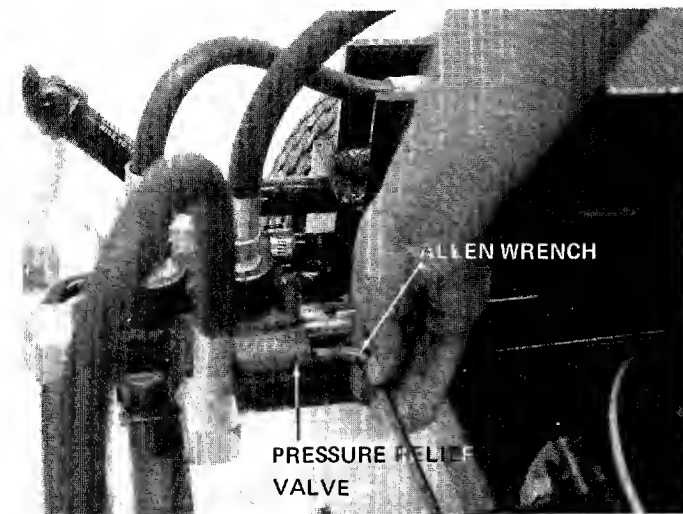


FIGURE 14

# MAINTENANCE



**WARNING**

Always stop engine and disconnect spark plug wire before performing any maintenance or adjustments.

## ENGINE OIL

Change oil first two (2) hours of operation and check oil level every five (5) operating hours or each time equipment is used.

Change oil every twenty-five (25) operating hours or sooner if equipment is operated in extremely dusty or dirty conditions.

Refer to engine manual for quantity and type of oil.

## LOG SPLITTER RESERVOIR OIL

Check oil in log splitter reservoir before every use. See figure 15.

1. Block up front of log splitter so beam is level.
2. Remove check pipe plug in rear of beam. See figure 15. If oil starts to come out of check pipe plug hole, oil level is correct. IF IT DOES NOT, add oil to breather tube (see figure 7) until it starts out.



**NOTE**

Use hydraulic sealant tape or pipe sealant on pipe plug threads.

3. Replace check pipe plug. Remove block from under front of beam.

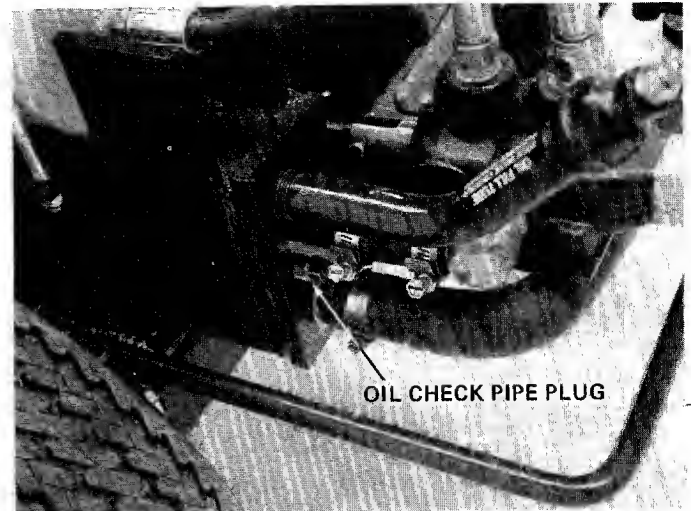


FIGURE 15

Change oil in the reservoir every (100) hours of operation.

1. Remove the hose clamp at inlet hose (bottom hose on rear of beam). See figure 16.



**NOTE**

Be prepared to catch oil in a suitable container.

2. Pull off inlet hose from strainer tube assembly and catch oil in a suitable container. See figure 16.
3. With an adjustable wrench remove the strainer tube assembly. See figure 16.



**NOTE**

The strainer tube assembly is 53" long.

4. Drain oil, clean strainer tube and reassemble using a hydraulic pipe sealant on the threads.
5. Remove the breather plug from breather tube. See figure 7. Pour approximately 3 gallons of Dexron transmission fluid ONLY into breather tube.



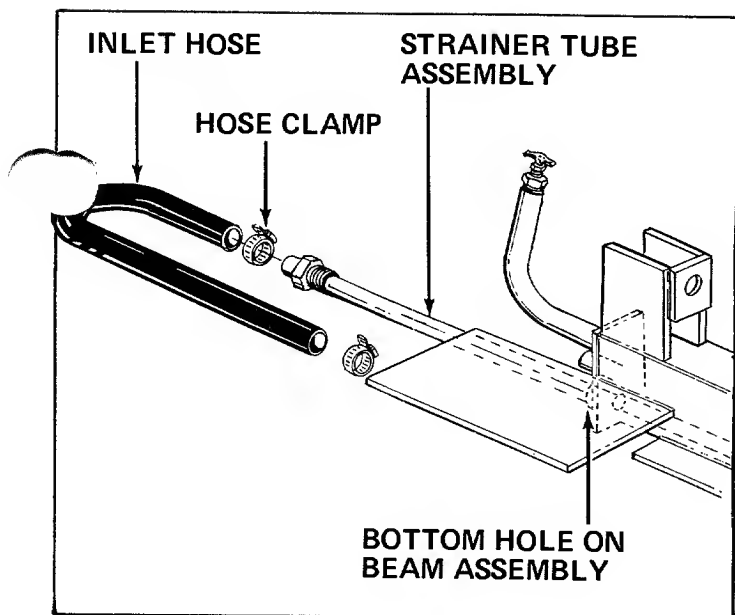


FIGURE 16

### STRAINER TUBE ASSEMBLY

If the ram does not move back and forth smoothly, the strainer tube assembly may be clogged.

To clean, follow instructions for changing the reservoir oil, step number 1 through 3. Clean the strainer tube assembly and reassemble using a hydraulic pipe sealant on the threads.

### HOSE CLAMPS

Check the hose clamps on the bottom of the pump for proper tightness before each use.

Hose clamps on the return hose should be checked once a season.

### STROKE RETURN STOP PLUNGER

If the engagement handle does not return to neutral (from reverse) before the pressure relief bypass opens, loosen the hex lock nut, and back out the hex bolt one or two turns. See figure 17.



#### NOTE

When the pressure relief valve opens, a loud high pitched sound is heard and engine labors.

Tighten hex lock nut and operate log splitter. Repeat if necessary.

### RAM OPERATION

If the ram does not move smoothly, run the ram its full stroke several times to clear out air in the system. Be sure the breather valve is open.

If this does not correct the problem, see Strainer Tube Assembly paragraph.

### INSTALLATION OF TIRE TO RIM

1. Lubricate tire beads and rim flanges.

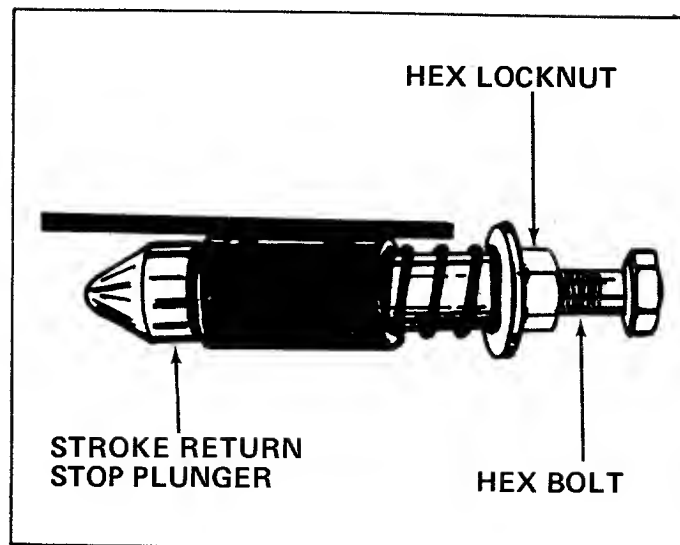


FIGURE 17

2. Do not exceed 30 P.S.I. when seating beads.
3. Adjust to recommended pressure after beads are sealed.

## OFF-SEASON STORAGE

In event engine is to be stored for any length of time (30 days or more), prepare as follows:

1. Drain gasoline by tipping or by siphon hose, then run engine until remainder is used and tank and carburetor empty.

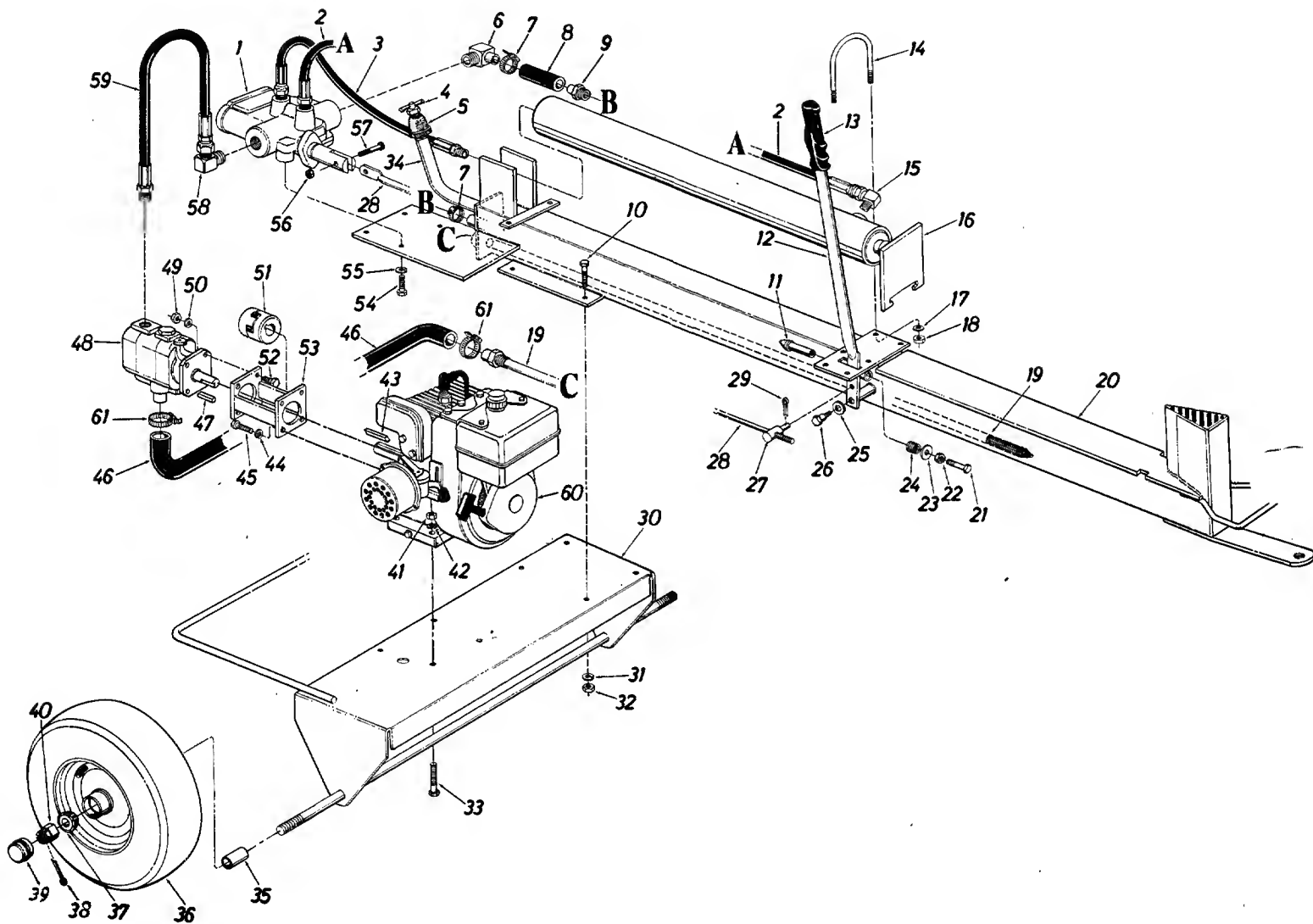


#### CAUTION

Drain into container outdoors away from fire or flame.

2. Drain carburetor by running engine until it stops from lack of fuel.
3. Protect the inside of engine for storage by removing spark plug and pouring one ounce of SAE 30 oil through spark plug hole into cylinder. Crank engine, without starting, several times to spread oil over cylinder walls.
4. Never store outside without a waterproof cover.

# Models 642 and 645



This instruction manual covers various models, and all specifications shown do not necessarily apply to your model. Specifications subject to change without notice or obligation.

# Models 642 and 645

## PARTS LIST FOR LOG SPLITTER MODELS 642 and 645

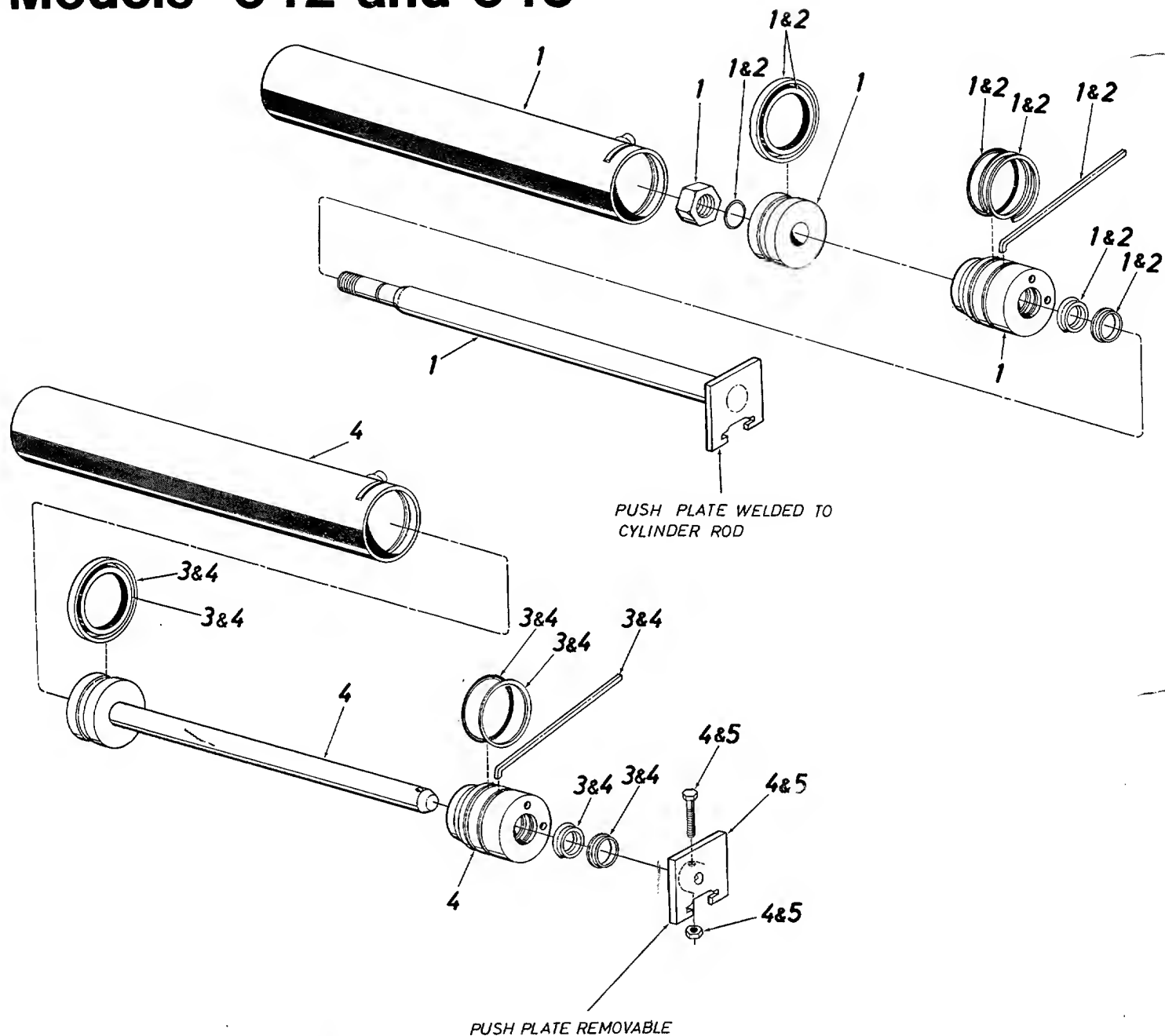
Part No.	Color Code	DESCRIPTION	New Part	Ref. No.	Part No.	Color Code	DESCRIPTION	New Part
1	717-0407	Control Valve		32	712-0123		Hex Nut 5/16-24 Thd.*	
2	727-0231	Return Stroke High Pressure Hose		33	710-0409		Hex Bolt 5/16-24 x 1.75" Lg.*	
3	727-0211	Forward Stroke High Pressure Hose		34	750-0501		Filler Tube	
4	737-0161	Breather Valve		35	750-0442		Spacer .75" I.D. x 1.12" O.D. x 1.56" Lg.	
5	737-0173	Female Adapter 3/4-14 x 1/4-18 N.P.T.F.		36	734-1016		Wheel Ass'y. Comp. 4.80/4.00 x 8	
6	737-0153	Return Elbow			734-1017		Wheel Rim Ass'y. (Service Only)	
7	726-0173	Hose Clamp 3/4" I.D.			734-0872		Tire Only 4.80/4.00 x 8 (Service Only)	
8	727-0210	Return Hose 3/4" I.D. x 2.62" Lg.					Tapered Roller Bearing (Service Only)	
9	737-0172	Nipple 1/2-14 N.P.T.F. x 1.5" Lg.		37	741-0107		Cotter Pin 5/32" Dia. x 1.00" Lg.*	
10	710-0117	Hex Bolt 5/16-24 x 1.00" Lg. (Grade 5)		38	714-0121		Hub Cap (Service Only)	
11	738-0406	Return Stroke Stop Plunger		39	734-0873		Hex Castle Nut 3/4-16 Thd.	
12	750-0428	Engagement Handle		40	712-0299		Hex Nut 5/16-24 Thd.	
13	08118	Grip		41	712-0123		L-Wash. 5/16" I.D.*	
14	747-0355	Cylinder Support Rod (for 3-1/2" Dia.) (642)		42	736-0119		Sq. Key 1/4" x 1/4" x 1.00" Lg.	
	747-0354	Cylinder Support Rod (for 4" Dia.) (645)		43	714-0128		L-Wash. 5/16" I.D.*	
5	737-0152	High Pressure 90° Elbow 3/8 N.P.T. x 9/16-18		44	736-0119		Hex Bolt 5/16-24 x .75" Lg.*	
16	-----	Cylinder Ass'y. (See Page 12 for Breakdown)		45	710-0157		Suction Hose (642)	
17	736-0169	L-Wash. 3/8" I.D.*		46	727-0228		Suction Hose (645)	
18	712-0798	Hex Nut 3/8-16 Thd.*		47	727-0229		Sq. Key (comes with Ref. No. 48)	
19	15234	Strainer Tube Ass'y.		48	717-0460		Pump with Sq. Key 1/8" x 1/8" x 1.00" Lg. (642)	
20	15235	Complete Oil Tank & Beam			717-0461		Pump with Sq. Key 1/8" x 1/8" x 1.00" Lg. (645)	
21	710-0624	Hex Bolt 5/16-24 x 1.50" Lg.		49	712-0123		Hex Nut 5/16-24 Thd.*	
22	712-0123	Hex Nut 5/16-24 Thd.*		50	736-0119		L-Wash. 5/16" I.D.*	
23	736-0159	Fl.-Wash. .34 I.D. x .88" O.D.		51	717-0462		Flexible Coupling	
24	732-0252	Compression Spring .64 O.D. x .81 Lg.		52	710-0117		Hex Bolt 5/16-24 x 1.00" Lg.*	
25	736-0160	Fl.-Wash. .53" I.D. x .94" O.D.		53	13295		Coupling Support Brkt. Ass'y.	
26	738-0234	Shld. Bolt .500" Dia. x .295		54	710-0216		Hex Bolt 3/8-16 x .75" Lg.*	
27	711-0198	Pivot Bushing		55	736-0105		Belleville Wash. 3/8" I.D.	
28	747-0297	Engagement Rod .38 Dia. x 31" Lg.		56	712-0107		Hex Cent. L.-Nut 1/4-20 Thd.	
29	714-0507	Cotter Pin 3/32" Dia. x .75" Lg.*		57	710-0106		Hex Bolt 1/4-20 x 1.25" Lg.*	
30	13748	Frame Ass'y.		58	737-0171		90° Solid Male Adapter	
31	736-0119	L-Wash. 5/16" I.D.*		59	770-0232		High Pressure Hose Ass'y.	
				60	-----		Engine	
				61	726-0132		Hose Clamp 1" I.D.	

\*For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

The engine is not under warranty by the log splitter manufacturer. If repairs or service is needed on the engine, please contact your nearest authorized engine service outlet. Check the "Yellow Pages" of your telephone book under "Engines - Gasoline."



# Models 642 and 645



**3-1/2" DIA. CYLINDER  
PARTS LIST FOR MODEL 642**

**4" DIA. CYLINDER  
PARTS LIST FOR MODEL 645**

Ref. No.	PART No.	DESCRIPTION	Ref. No.	PART No.	DESCRIPTION
1	717-0459	Cylinder Ass'y. Comp. (Welded Push Plate)	1	717-0406	Cylinder Ass'y. Comp. (Welded Push Plate)
2	<del>X753-0271</del>	3-1/2" Cyl. Kit "O"-Ring Set (Welded Push Plate)	2	753-0263	4" Cyl. Kit "O"-Ring Set (Welded Push Plate)
3	<del>753-0272</del> 372	3-1/2" Cyl. Kit "O"-Ring Set (Removable Push Plate)	3	753-0273	4" Cyl. Kit "O"-Ring Set (Removable Push Plate)
4	717-0459	Cylinder Ass'y. Comp. (Removable Push Plate)	4	717-0406	Cylinder Ass'y. Comp. (Removable Push Plate)
5	753-0274	3-1/2" Cyl. Push Plate Kit	5	753-0275	4" Cyl. Push Plate Kit

**MTD PRODUCTS INC ..... YARD-MAN COMPANY**

P.O. BOX 36900 • CLEVELAND OHIO 44136